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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,774	10/13/2000	Akio Katsube	018976-181	8104

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EXAMINER

COMPTON, ERIC B

ART UNIT PAPER NUMBER

3726

19

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/689,774

Examiner

Eric B. Compton

Applicant(s)

KATSUBE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Pri ority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 23, 2003, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7 and 9-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the bonding portion" in line 8. There is insufficient antecedent basis for this limitation in the claim. Perhaps this limitation should read --a bonding portion--.

Claims 9-15 depend from claim 7 and therefore are also indefinite.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-022795 to Kazuhiko et al (SHIN ESTU CHEM CO) in view of JP 11-045912 to MATSUSHITA.

Kazuhiko et al disclose a method for manufacturing electronic components, comprising: holding a substrate (3) on a surface of a holding jig (1,2) made of an elastic material (1), in which at least the surface of the elastic material is adhesive, by the strength of the surface; and mounting and electrically connecting an element (see section [0020] of the machine translation]) on the substrate while surface is held on the surface of the elastic material.

However, they do not specifically disclose how the electronic components are mounted on the substrate.

MATSUSHITA discloses a method an apparatus for bonding electronic components to substrate. The electronic components are bump bonded to the substrate using ultrasonic waves. The process allows the component to be conductively bonding very firmly (Derwent English Abstract).

Regarding claim 7, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al by a bump bonding process

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using ultrasonic waves, in light of the teachings of MATSUSHITA, in order to manufacture electronic components using conventional bonding apparatus known in the art to firmly bond the component to the substrate.

6. Claims 9, 10-12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/MATSUSHITA in view of US patent 4,098,945 to Oehmke.

Kazuhiko et al/ MATSUSHITA disclose the invention cited above. Kazuhiko et al do note that the rubber layer may be of the hardening type. English Translation, [0008]. However, they do not explicitly disclose that the elastic material has a hardness of at least A30.

Oehmke discloses a conductive adhesive elastic material comprising an elastic binder for "peelable adhesive fastening of metallic materials without interruption of the electrical conductive pathways between them" (col. 7, lines 62-64). It is disclosed that the conductive material may preferably comprise silicone rubber (see col. 6, lines 38-43). Furthermore, it is noted that the "binder should be capable of providing a soft composition having a Shore A hardness of less than about 40" (col 6., lines 34-36). It is also pointed out that a Shore A hardness of greater than 40 is too hard for most applications (cols. 1-2, lines 66-1).

Regarding claim 9, it would have been obvious to one having ordinary skill in the art at the time of invention, to have provided the elastic of Kazuhiko/ MATSUSHITA with a rubber having a hardness of at least A30, in light of the teachings of Oehmke, in order

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to provide an adhesive having a requisite conformability, moldability, and flexibility (col 2, lines 21+).

Regarding claim 10, Applicant, Kazuhiko, and Oehmke all disclose a silicone rubber composition. Applicant notes these composition are stable at 250 °C. Kazuhiko et al do note that the rubber layer has a thermal resistance. English Translation, [0026]. Therefore, it is inherent that this composition is stable at this temperature also. "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 11, in Kazuhiko the step of holding is carried out using a jig having a laminate structure comprising: a hard material (2) and the elastic material (1).

Regarding claim 12, in Kazuhiko and Oehmke the elastic material is an adhesive silicone rubber layer.

Regarding claim 14, MATSUSHITA discloses bump bonding the component to a substrate.

7. Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuhiko et al/ MATSUSITA/Oehmke in view of Applicant's Admitted Prior Art (AAPA).

Kazuhiko et al/MATSUSITA/Oehmke disclose the invention cited above. However, they do not specifically disclose how the electronic components are mounted on the substrate.

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AAPA notes as on prior art on page 1, lines 22+, of the specification that wire bonding is a known bonding technique using an automated process.

Regarding claim 13, it would have been obvious to one of ordinary skill in the art to manufacture the electronic component of Kazuhiko et al/MATSUSITA/Oehmke by a wire bonding process, in light of the teachings of AAPA, in order to manufacture electronic components using conventional bonding apparatus known in the art.

Response to Arguments

Applicant's arguments filed December 1, 2003, have been fully considered but they are not persuasive.

Applicant arguments had previously been addressed in the Final Office Action dated August 29, 2003 (Paper No. 13). With respect to JP 07-022795 (Kazuhiko et al), Applicant argues that this reference does not show, teach, or suggest "mounting an electrically connecting an element on a substrate while the substrate is held on a surface of an elastic material." Response, page 6. It is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 7, emphasis added, recites

A method of manufacturing electronic parts, comprising:
holding a substrate on a surface of a holding jig made of an elastic material, in which at least the surface of said elastic material is adhesive, by the adhesive strength of the surface;

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mounting and electrically connecting an element on said substrate while the substrate is held on the surface of the elastic material; and applying ultrasonic waves to the bonding portion at which the electric connection is performed.

As suggested by [0020] of the reference, electronic parts (no ref) are electrically connected to the FPC substrate (3), via copper circuit patterns and solder (pewter reflow), while it is held on the surface of a holding jig (1, 2) made of an elastic material (1) by the adhesive strength of the elastic material. Despite Applicant's arguments to the contrary, the language of claim 7 does not explicitly require the substrate to be electrically connected to the elastic material, but only that an element is electrically connected to the substrate while the substrate is held on the surface of the elastic material. Thus, Kazuhiko et al clearly teach the first and second claim limitations above.

Applicant further argues, "Nothing is Kazuhiko et al. shows, teaches, or suggests applying ultrasonic waves to a bonding portion at which an electrical connection is performed as claimed in claim 7." Response, page 6. In the Final Office Action dated August 29, 2003 (Paper No. 13), the Examiner rejected claim 8, as being unpatentable over Kazuhiko et al in view of JP 11-045912 to MATSUSHITA. By this amendment Applicant incorporate claim 8 (canceled) into claim 7. MATSUSHITA discloses applying ultrasonic waves to a bonding portion in order firmly bond the component to the substrate. Thus, the Examiner has presented a prima face case of obviousness for modifying Kazuhiko et al. Applicant did not rebut MATSUSHITA with regard to this limitation in the response.

With respect to U.S. Pat 4,098,945 (Oehmke), Applicant previously argued that this reference does not teach or suggest "the [conductive elastic] material can hold a

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substrate on its surface by the adhesive strength of its surface.” Response dated July 16, 2003 (Paper No. 12), page 11. However, Oehmke discloses “the binder system is itself pressure-sensitive so that the entire conductive composition will ***immediately adhere to conductive surfaces*** upon impact.” Col. 6, lines 44-46 (emphasis added). Likewise, the reference refers to the layers as an adhesive. *Id.* at lines 44-64. It is inherent that an adhesive has a certain degree of adhesive strength, for which the reference refers to as 180 ° (adhesion) peel strength and provided empirical data. *Id.* at Table II. Lastly, Oehmke discloses that “[these] compositions are useful for a wide variety of application which include peelable adhesive fastening of metallic material without interruptions of the electrical conductive pathway between them ...” for example for use as a ground or to fasten metal objects together. *Id.* at Cols. 7-8, lines 60-2. Therefore, Oehmke conductive adhesive would be sufficient to adhesively attach electronic components to a substrate. The Examiner previously made a prima facie case above for combining these teachings with those of Kazuhiko et al. In addition, Applicant argues that there is no suggestion of “mounting and electrically connecting an element on the substrate while the substrate is held on the surface of the elastic material.” Paper No. 12, page 12. This, limitation was previously discussed with respect to Kazuhiko et al, *supra*.

Applicant’s arguments with regards to the other rejections are believed to be moot in light of the clarification above.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (703) 305-0240. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter B. Vo can be reached on (703) 308-1789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



Eric Compton
Patent Examiner
AU 3726